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EXAMINER

NGUYEN, N

ART UNIT	PAPER NUMBER
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1754

12

DATE MAILED: 05/31/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/249,100

Applicant(s)

HIBI et al

Examiner

N.M. NGUYEN

Group Art Unit

1754

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on April 14, 2000
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-88 is/are pending in the application.
- Of the above claim(s) 1-75, 88 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 76-87 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 88-10 ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892 (filed 12/10/1998 3/31/00) ☐ Notice of Informal Patent Application, PTO-152
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948 ☐ Other _____

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DETAILED ACTION

Claims 1-75, 88 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper No. 11 (filed April 19, 2000).

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claims 80-82, 86-87 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 80-82, 86-87, it is unclear what is required by "(mol/g-carrier) per unit weight of a carrier is used as the carrier. Is "a carrier" the same as the "titanium carrier"? Is the limitation in the parentheses positively required? If it is, the "mol/g-carrier" appears to be redundant with "per unit weight of a carrier".

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 76 is rejected under 35 U.S.C. 102(b) as being anticipated by Grätzel et al (4,847,231).

Grätzel '231 discloses a catalyst having a mixture of Ru and RuO₂ highly dispersed on a support (note claim 1). In Example I, the support is TiO₂ with 90% anatase and 20% rutile (note columns 5-6).

The catalyst of Grätzel '231 anticipates the claimed product.

Claims 76-79 are rejected under 35 U.S.C. 102(b) as being anticipated by Beer et al (4,585,540).

Beer '540 discloses a porous high surface area composite electroconductive catalytic material comprising a porous preform host catalytic matrix and a subsequently-applied additional catalyst dispersed throughout and supported by the preformed matrix, wherein the preformed matrix is a mixed catalytic material comprising at least one platinum-group metal oxide mixed intimately with at least one non-precious metal oxide in a porous high surface area support structure (note claim 1 and claim 9, item (a)). The porous matrix consists essentially of mixed crystal material of rutile structure (note claim 2). In Example 1 and sample #59 (from Table 2), ruthenium-titanium oxide is disclosed as the mixed catalytic material. The preformed matrix is considered the same as the claimed supported catalyst. It should be noted that the titanium oxide

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is referred to as "non-precious metal oxide in a porous high surface area support structure" (note item (a) in column 4). In Beer '540, the mixed crystal materials which form the preformed matrix has a single crystalline phase of rutile structure (note paragraph bridging columns 5-6), the titanium oxide used must be in rutile form.

The preform matrix of Beer '540 anticipates the claimed product.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 76, 83-85 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Grätzel '231.

Grätzel '231 discloses a catalyst as stated above.

For claims 83-85, any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct

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not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

Claims 76-87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grätzel '231.

Grätzel '231 discloses a catalyst comprising highly dispersed Ru/RuO_x (x less than or equal 2) on TiO₂ carrier (note Example 1 and claim 1). Grätzel '231 further discloses that in the case of TiO₂, mixture of anatase and rutile forms work very well as support material, however, pure anatase and pure rutile have also yielded good results when used in conjunction with the mixed ruthenium as a catalyst (note column 3, lines 26-31). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use pure rutile form as the support for the catalyst of Grätzel '231 because the rutile form have yielded good results.

For the product-by-process limitations, see *In re Brown* and *In re Fessmann* as stated above.

In Grätzel '231, KOH is used during the process of making the catalyst (note Example I), this fairly suggests that at least some "OH" would remain in the catalyst.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to optimize the process condition in Grätzel '231 and in turn the amount of "OH" in the catalyst to obtain the best results, i.e. a catalyst suitable for hydrogenation processes.

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Claims 76-87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buysch et al (6,001,768).

Buysch '768 discloses a supported catalyst containing, a platinum, a platinum metal compound or a complex containing a platinum metal compound on a support comprising one or more oxides of the metals Ti, V, Mn, Cr, Fe, Co, Ni, Cu, La, Nb, Mo, Pb, the rare earth metals having the atomic numbers from 58-71 and the actinides having the atomic numbers 89-92 (note claim 1).

The support can be TiO_2 , preferably in the rutile form (note column 3, lines 56-60). The platinum metal can be Pd, Pt, Ir, Ru or Rh (note column 4, lines 34-36). Buysch '768 further discloses that it is possible to fix one or more platinum metals by precipitation with a base. Suitable bases are NaOH, LiOH, KOH, etc. (Note column 5, lines 24-55). Thus, there would at least be some "OH" remain in the catalyst of Buysch '768. The catalyst is prepared by methods which are known to those skilled in the art. Thus, solutions of one or more of the platinum metals specified can be applied to the catalyst support (note column 5, lines 16-23), drying (note column 6, lines 22-28), calcining (note column 6, lines 29-45). The calcining step fairly suggests that the platinum metal is present in the catalyst in an oxide form.

The difference is Buysch '768 does not specifically disclose an example with rutile titanium oxide as the support and ruthenium oxide as the catalyst material, i.e. the number of embodiments disclosed in Buysch '768 is too large for anticipation.

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It would have been obvious to one skilled in the art to select any combination among the specifically disclosed compounds, *Merck & Co. Inc. v. Biocraft Laboratory Inc.* 10 USPQ 1846.

Claims 76-79, 83-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beer '540.

Beer '540 discloses a preform matrix as stated in the above rejection.

For claims 83-85, any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication should be directed to Ngoc-Yen Nguyen at telephone number (703) 308-2536.

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The fax phone number for this Group is (703) 305-3599 (for OFFICIAL After Final amendment only) or (703) 305-5408 (for all other OFFICIAL faxes). UNOFFICIAL fax can be sent to (703) 305-6078.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

N. M. Nguyen
May 30, 2000


N. M. Nguyen
Primary Examiner
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